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June 8, 2010

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Kansas City District
601 East 12th Street, Room 463
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ATTN: CENWK-PM-ES/Buckrucker

CONTRACT: W912DQ-08-D-0018

PROJECT: Lower Passaic River Restoration Project
Remedial Investigation/Feasibility Study Oversight
Lower Passaic River Study Area, New Jersey

SUBJECT: Final Quality Assurance Project Plan, Addendum #2
Late Spring/Early Summer 2010 Fish Community Survey

Dear Ms. Buckrucker:

CDM Federal Programs Corporation (CDM) is pleased to submit this electronic copy of the Final Quality Assurance Project Plan, Addendum #2 for the Oversight of Remedial Investigation/Feasibility Study Fish Community Surveys in support of the Lower Passaic River Restoration Project in the Lower Passaic River Study Area, New Jersey. This document is based on the CPG's Late Spring/Early Summer 2010 Fish Community Survey Addendum Number 3 to the Quality Assurance Project Plan.

If you have any comments concerning this submittal, please contact me at (212) 377-4056.

Very truly yours,
CDM FEDERAL PROGRAMS CORPORATION

A handwritten signature in black ink, appearing to read 'C. Tsang'.

Frank Tsang, P.E.
Task Order Manager

Attachment

cc: S. Vaughn, EPA
J. Mosher, P.E., CDM (Letter Only)
G. Molnar, CDM
Project File

Bill Sy, EPA
S. Budney, CHMM, CDM
J. Oxford, CHMM, CDM

US Army Corps of Engineers
Kansas City District

Quality Assurance Project Plan
Final Addendum #2
Late Spring/Early Summer 2010 Fish Community
Survey

Remedial Investigation/Feasibility Study Oversight
Lower Passaic River Restoration Project
Lower Passaic River Study Area, New Jersey

USACE Contract No. W912DQ-08-D-0018
Task Order No. 014

June 8, 2010

**LOWER PASSAIC RIVER RESTORATION PROJECT
OPERABLE UNIT (OU) 2**

**Remedial Investigation/Feasibility Study Oversight
Quality Assurance Project Plan
Final Addendum #2
Late Spring/Early Summer 2010 Fish Community Survey
Lower Passaic River Study Area, New Jersey**

USACE CONTRACT No. W912DQ-08-D-0018

TASK ORDER No. 014

June 8, 2010

**Prepared for:
U.S. Army Corps of Engineers
Kansas City District**

**Prepared by:
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CDM Field Oversight Form for Fish Survey is located in Appendix B of the Physical Water Column Monitoring/Generic Final QAPP dated March 9, 2010.

Note: Worksheets not included herein are included in the CDM Physical Water Column Monitoring/Generic Final QAPP dated March 9, 2010.

Introduction

CDM Federal Programs Corporation (CDM) will perform oversight of the Cooperating Parties Group (CPG) Late Spring/Early Summer 2010 Fish Community Survey.

This Quality Assurance Project Plan (QAPP) Addendum and the *Lower Passaic River RI/FS Oversight Final QAPP, Physical Water Column Monitoring and Generic Information for Upcoming Tasks*, (Final QAPP) dated March 2010 are the governing documents for execution of this oversight. CDM will use the various plans prepared by the CPG contractors to verify proper execution of the Fish Community Survey, conducted as part of the RI/FS.

CDM's March 2010 Final QAPP indicated that future oversight tasks assigned to CDM would be appended with selected worksheets. It was anticipated that Worksheets 12, 15, 18, 20, and 28 would be updated as needed for additional events, and other worksheets would also be included. However, since the seasonal fish surveys will not include analytical services, worksheets 12, 15, 20, and 28 are not required for this update. Instead, the following worksheets are included in this addendum to reflect the CPG Fish/Decapod QAPP dated July 2009 and Fish/Decapod QAPP Addendum No. 3:

- Worksheet No. 1 contains the title and approval pages for the addendum
- Worksheet No. 2 contains the QAPP identifying information
- Worksheet No. 3 provides the distribution list
- Worksheet No. 10 describes the specific problem definition for the fish community survey
- Worksheet No. 11 provides the project quality objectives
- Worksheet No. 14 provides a summary of project tasks
- Worksheet No. 16 provides the schedule and timeline
- Worksheet No. 18 provides the proposed survey locations
- Worksheet No. 37 provides the usability assessment (field summary report)

The CPG Fish/Decapod QAPP Addendum No. 3: Late Spring/Early Summer 2010 Fish Community Survey provides procedures for conducting the fish community survey.

1.1 Late Spring/ Early Summer 2010 Fish Survey Summary

CDM's oversight program is designed to provide technical review and evaluation of the CPG-implemented QAPPs for fish surveys. Additional oversight activities will include review of CPG-selected sampling locations and supporting documents.

This oversight QAPP Addendum details the planning processes for conducting field oversight; no samples will be collected. The objective of CDM's observations and review is to verify the accuracy of the CPG's data.

QAPP Worksheet #1
Title and Approval Page

Document Title: LPR Restoration Project Quality Assurance Project Plan (QAPP) Addendum No. 2, Fish Community Survey

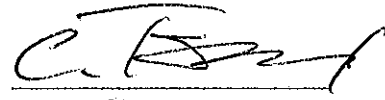
Lead Organization: United States Army Corps of Engineers (USACE) - Northwestern Division

Preparer's Name and Organizational Affiliation: Tonya Bennett, CDM

Preparer's Address, Telephone Number, and E-mail Address: 125 Maiden Lane, New York, NY 10038; 212-377-4532; bennetttm@cdm.com

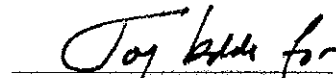
Preparation Date (Day/Month/Year): June 8, 2010

Investigative Organization's Task Order Manager/Date:


Signature

Frank Tsang/CDM

Investigative Organization's Project QA Manager/Date:


Signature

Doug Updike/CDM

Lead Organization's Project Manager/Date:

Signature

Elizabeth Buckrucker/USACE - KC District

EPA Remedial Project Manager /Date:

Signature

Stephanie Vaughn

EPA Quality Assurance Officer /Date:

Signature

William Sy

Document Control Numbering System: Not Applicable (N/A)

QAPP Worksheet #2

QAPP Identifying Information

Site Name/Project Name: Lower Passaic River (LPR) Restoration Project	Title: QAPP Addendum No. 2, Fish Community Survey
Site Location: LPR study area, New Jersey	Revision Number: 0
Site Number/Code: NJD 980528996	Revision Date: NA
Operable Unit (OU): OU2	
Contractor Name: CDM	
Contractor Number: W912DQ-08-D-0018	
Contract Title: Unrestricted Indefinite Delivery/Indefinite Quantity, Multiple Award Contract, for Architect-Engineer (AE) Environmental Services for EPA Region 2 and the Corps of Engineers Northwestern Division.	
Task Order Number: 14	

1. Regulatory program: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Superfund)
2. Approval entity: United States Army Corps of Engineers (USACE)
3. The QAPP is (select one): Generic ☒ **Project Specific**
4. Dates of negotiation: NA
5. Dates and titles of QAPP documents written for previous and current site work, if applicable:

Title	Approval Date
See CDM Final QAPP for a full list of previous QAPP prepared for site work	
Lower Passaic River RI/FS Oversight Final QAPP, Physical Water Column Monitoring and Generic Information for Upcoming Tasks (PWCM/Generic QAPP)	March 2010
Lower Passaic River RI/FS Oversight QAPP, Draft Addendum #1: Avian Community Survey	To be determined

6. Organizational partners (stakeholders) and connection with lead organization:
EPA, USACE, New Jersey Department of Environmental Protection (NJDEP), New Jersey Department of Transportation (NJDOT), National Oceanic Atmospheric Administration (NOAA), United States Fish and Wildlife Service (USFWS)
7. Data users: Partner Agencies, CDM, Louis Berger Group, Inc., HydroQual, Inc., and stakeholders.
8. If any required QAPP elements and required information are not applicable to the project, then circle the omitted QAPP elements and required information on the attached table. Provide an explanation for their exclusions below: the Final Generic QAPP provides all the required worksheets. *This addendum addresses only the Fish Community Survey oversight, therefore only worksheets pertinent to this task and information not previously provided are included.*

This is an oversight project; therefore, the CPG's contractors will be performing health and safety monitoring, and will be responsible for equipment calibration, inspection and maintenance (survey instruments). CDM will monitor the field activities and document observations.

QAPP Worksheet #3 Distribution List

QAPP Recipients	Title	Organization	Telephone Number	Fax Number	E-mail Address
Stephanie Vaughn	Remedial Project Manager (RPM)	EPA	(212) 637-4427	(212) 637-4393	Vaughn.stephanie@epamail.epa.gov
Elizabeth Buckrucker	Project Manager (PM)	USACE	(816) 389-3581		elizabeth.a.buckrucker@usace.army.mil
William Sy	QA Officer	EPA	(732) 632-4766	(732) 321-6622	Sy.william@epa.gov
Janine MacGregor	Partner Agency	NJDEP	(609) 633-0784		Janine.macgregor@dep.state.nj.us
Elkins Green	Partner Agency	NJDOT	(609) 530-8075		elkins.green@dot.state.nj.us
Tim Kubiak	Partner Agency	USFWS	(609) 646-9310		tim_kubiak@fws.gov
Reyhan Mehran	Partner Agency	NOAA	(212) 637-3257		Reyhan.mehran@noaa.gov
Jeanne Litwin	Project Manager	CDM	(212) 377-4524	(212) 785-6114	litwinJ@cdm.com
Frank Tsang	Task Order Manager	CDM	(212) 377-4056	(212) 785-6114	Tsangc@cdm.com
Sharon Budney	Deputy Task Order Manager	CDM	(732) 590-4662	(732) 225-7851	budneysl@cdm.com
Jeniffer Oxford or other assigned QAC	Regional QA Coordinator (RQAC)/ Project QA Officer	CDM	(212) 377-4536	(212) 785-6114	oxfordjm@cdm.com
George Molnar	Field Task Leader	CDM	(732) 590-4633	(732) 225-7851	molnargc@cdm.com
Scott Kirchner	Analytical Services Coordinator	CDM	(732) 590-4677	(732) 225-7851	kirchnersf@cdm.com

QAPP Worksheet #10 Problem Definition

The problem to be addressed by the project:

Fish survey: As part of the LPR restoration project, the CPG will conduct three seasonal fish community surveys to provide qualitative data on the fish species that use the LPR study area (LPRSA). The late spring/early summer 2010 survey will complement the fish community surveys of late summer/early fall 2009 and winter 2010. The oversight program is designed to provide observation, technical review and evaluation of the CPG-implemented field sampling plans to ensure that the CPG contractors conduct the fish survey in accordance with their approved QAPP.

The environmental questions being asked:

- Does the CPG data adequately describe the site conditions and is it representative for project decisions?
- Is the CPG data complete and accurate?
- Are the CPG fish surveys being completed in a consistent fashion?
- Are the CPG fish surveys correctly identifying each fish species?
- Are the field observations comparable?
- Is CDM's field observation complete?

Secondary data:

The CPG used the secondary data provided on worksheet #11 of the Fish/Decapod QAPP Addendum No. 3: Fish Community Survey to identify fishes previously surveyed in the LPRSA and to prepare their QAPP. CDM reviewed this CPG QAPP and provided comments. Future use of the secondary data may be to provide technical review of CPG documents.

The possible classes of contaminants and the affected matrices: Not applicable

The rationale for inclusion of chemical and non-chemical analyses: Not applicable

Project decision conditions ("If..., then..." statements):

- If field work is inconsistent with the CPG QAPPs, then the field oversight staff will verify tasks with respect to the CPG's QAPPs, and HASP and note deviations with the CPG's field project leader and document such discussions in the Daily QC Reports submitted to EPA. The CDM Task Order Manager, USACE PM and EPA RPM will be informed if there are deviations.
- If the CPG team needs to relocate survey locations, or there are any changes to the planned field program, CDM will communicate this change to the USACE and EPA, and document it on the Daily Summary Reports.

CDM will present the data findings in a Report and submit it to the USACE and EPA who will then determine if any additional actions are required.

QAPP Worksheet #11

Project Quality Objectives /Systematic Planning Process Statements

Who Will Use the Data? USACE, EPA and other partner agencies, CDM, and stakeholders (as necessary).

What Will the Data be Used For?

Oversight activities will monitor the CPG-implemented fish field survey program to verify that elements of the approved CPG RI/FS QAPPs are fulfilled. The oversight field crew will also review the CPG-selected survey locations. CDM observed data will be compared to the data observed by the CPG to determine if a bias exists in the data produced by the CPG and if the data is complete.

The CDM oversight data will be used for comparison with the CPG data and to determine whether the CPG data is accurate and compliant with the approved CPG QAPPs.

To further achieve these objectives, CDM field personnel will observe the CPG's contractors field implementation of the RI/FS QAPPs and note any deviations. Deviations will be brought to the attention of the CPG's contractor, and reported to the CDM task order manager who will communicate this information to the USACE PM and EPA RPM. These will be documented in the Daily Field Summaries and in the Final Report and include a discussion of the impact of the deviation(s) on the data quality. The CPG contractor's activities will be documented in the field logbook and oversight forms. A copy of the oversight forms are provided in Appendix E.

What Type of Data is Needed?

Data needs include: Three surveys to document fish genus and species, survey location, time of observation, life stage, gender (when possible), and fish activity.

How much data are needed?

Oversight observations will be made at the locations shown on Figure 1 of the CPG's Fish/Decapod QAPP Addendum No. 3, Fish Community Survey.

Observations will be conducted at the same locations and times as the CPG contractor survey.

How "good" do the data need to be in order to support the environmental decision?

The data to be collected is qualitative in nature, therefore quantitative limits and quantitative quality objectives are not applicable. The oversight observation will mirror the CPG locations and frequencies to allow data comparability and to evaluate the completeness of the CPG's data. The representativeness of the data is dependent on the sampling design. Observations will be reported in text format and will include a discussion of the data quality, deviations from the QAPP, and oversight data comparability with the CPGs data. This review will be used to evaluate the accuracy of the CPG data.

In addition, to ensure that the observed data are usable, the accuracy, representativeness, comparability, and completeness will be evaluated and presented in a CDM data report. The data usability assessment will evaluate whether appropriate field procedures were followed and whether data met the approved QAPP(s) and are usable for the stated project needs (see Worksheet # 37).

Where, when, and how should the data be collected?

Field survey procedures are described in the CPG's Fish/Decapod QAPP Addendum No. 3. Oversight will be performed according to the CPG's schedule. The fish surveys will begin in June 2010 and continue through January 2011 (refer to Worksheet 16). The survey locations are shown in the CPG's Fish/Decapod QAPP Addendum No. 3, Figure 1. The CPG's Fish/Decapod QAPP Addendum No. 3 (worksheet # 11 and Attachments J and L) details the survey procedures which

QAPP Worksheet #11
Project Quality Objectives /Systematic Planning Process Statements

describe how the investigation will be performed.

Who will collect and generate the data?

CDM oversight staff will record field observations while the field sampling program is being conducted.

How will the data be reported?

- Field observations will be recorded as described in CDM's Final QAPP using field oversight forms provided in Appendix E. CDM will also record observations in field logbooks in accordance with TSOP 4-1 provided in Appendix C of the Final QAPP.
- Results will be reported in text format and will include a discussion of the data quality, deviations from the QAPP, and oversight data comparability with the CPGs data. This review will be used to evaluate the accuracy of the CPG data.

How will the data be archived?

- Hard copies of data will be kept in the Edison office until archived in the project file; if requested survey data will be uploaded to a PREmis or equivalent database.

The CDM Final QAPP March 2010 contains other archival information.

QAPP Worksheet #14 Summary of Project Tasks

Sampling Tasks:

As part of the LPR Restoration Project, the CPG is implementing an estuarine dynamic and sediment transport, and biological field sampling program to support the RI/FS. On behalf of the USACE and EPA, CDM will provide oversight and will record observations at all locations. The oversight program is designed to provide technical review and evaluation of CPG-implemented field sampling plans. Worksheet 10 lists the oversight activities that will occur. No splits will be accepted for the fish survey.

Analysis Tasks:

Split samples will not be accepted during oversight of the fish surveys. Oversight forms (Appendix E) will be completed and photographs will be taken by oversight staff to document field observations.

Quality Control Tasks: CDM will observe CPG's calibration, testing and maintenance of their GPS units. CDM will document observations of the survey on field logs and in the field logbooks. The CDM Deputy Task Order Manager or designee will review the logs to ensure that the required information has been documented.

Secondary Data: Since this is an oversight project, no secondary data is being used directly by CDM. Data generated by the CPG- field program will be used as shown on worksheet 13 of the CPG's Fish/Decapod QAPP Addendum No. 3: Fish Community Survey.

Data Management Tasks:

Survey observations will be documented as described above and undergo QC review. The survey sheets will be maintained in the project file and used to review the CPG's reports. The information can be uploaded to the PREMIS database if required.

No analytical data will be generated.

Documentation and Records: Records of observed species will be documented on Appendix E – CDM Field Oversight Forms for the Fish Survey. All field activity and deviations will be documented on the survey sheets and additional information in project logbooks.

The Fish Community Survey Procedures are documented in Attachment J and L of the CPG's Fish/Decapod QAPP Addendum No. 3: Fish Community Survey. Oversight observations will be documented in the following:

1. Field logbooks
2. Oversight summary report
3. Data Quality Summary Report

All procedures will be documented in accordance with TSOP 4-1 provided in Appendix C of the CDM Final QAPP March 2010.

QAPP Worksheet #14 Summary of Project Tasks

Assessment/Audit Tasks: See CDM Final QAPP March 2010 for upcoming tasks (CDM 2009)

Data Review Tasks: The CPG Fish Community Data Report will be reviewed by CDM. A data quality evaluation will be performed based on the CPG compliance with the approved CPG QAPP. A comparison of CDM's field staff observations with the CPG data report will be included in the data quality evaluation and submitted to the USACE and EPA.

QAPP Worksheet #16
Project Schedule Timeline Table

Activities	Organization	Anticipated Date(s) of Initiation	Anticipated Date of Completion	Deliverable	Deliverable Due Date
Prepare and submit: Draft Oversight QAPP Addendum for Fish Community Survey to EPA and USACE	CDM	May 2010	May 20, 2010	UFP-QAPP addendum	May 20, 2010
Prepare and submit : Final Oversight QAPP Addendum for Fish Community Survey	CDM	June 7, 2010	June 8, 2010	UFP-QAPP addendum	June 8, 2010
Oversight of fish survey	CDM	June 21, 2010	3 weeks after commencement date	Summary report of field observations including photos	To be determined
Oversight /Data Evaluation	CDM	To be determined	To be determined	Oversight Summary Report/ Data Quality Summary Report	To be determined
Review CPG Fish Community Survey Data Report	CDM	90 days after each survey event	1 month after receipt of report	Comments on Fish Community Survey Data Report	1 month after receipt of report

QAPP Worksheet #18
Sampling Locations and Methods/SOP Requirements Table

Survey Location ID	Depth	Analytical Group	Concentration Level	Estimated Number of Samples (identify field duplicates)	Sampling SOP Reference	Rationale for Sampling Location
Refer to CPGs Fish/Decapod QAPP Addendum No. 3 prepared by Windward Environmental (Windward)	Not applicable	Not applicable	Not applicable	All survey locations will be observed.	Attachment J and L of QAPP prepared by Windward for CPG	See Worksheet 10 and 11 of CPG QAPP prepared by Windward
Refer to QAPP prepared by Windward for the CPG (Worksheet # 18) – Fish/Decapod QAPP Addendum No. 3 : Fish Community Survey						

Notes:

As the scope of work and schedule for additional events is better defined, this worksheet will be updated in amendments to this QAPP.

QAPP Worksheet #37

Usability Assessment

An Oversight Summary Report and Daily Field Summary reports will be prepared by CDM personnel. Frank Tsang, Task Order Manager, will be responsible for its content and for assigning this task to CDM personnel. The Data Quality Summary Report will include a comparability review and usability assessment of the data. Data will be documented in the CPG's Fish Community Survey Data Report. The Data Quality Summary Report will include an overall assessment of the CPG's data using field oversight observations of deficiencies and compliance.

Accuracy –The accuracy of the CPG data set will be measured qualitatively by assessing the observed adherence of the fish survey to the CPG's QAPP.

Representativeness –The representativeness of the survey data will be evaluated based on the ability to implement the fish surveys as written in the QAPP. A determination will be made based on the observations completed during the surveys, whether the fish survey observations accurately represent fish populations in the study area during each of the seasonal surveys, and whether the results are comparable with those made in previous surveys.

Comparability –The results of this oversight will be used in conjunction with the CPG's data to support the survey results. The data will be observed and reported in a manner that is comparable to the CPG's data set.

Completeness – A completeness check will be performed. Completeness will be determined based on whether all CPG planned (or modified) survey locations were visited at the pre-determined frequencies compared to the project completeness goal of 90 percent. A discussion summarizing the results of project completeness and any limitations on the use of the data will be described in the report.

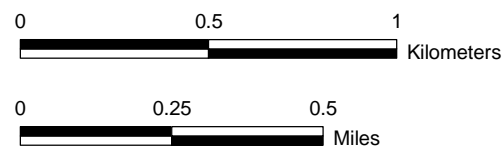
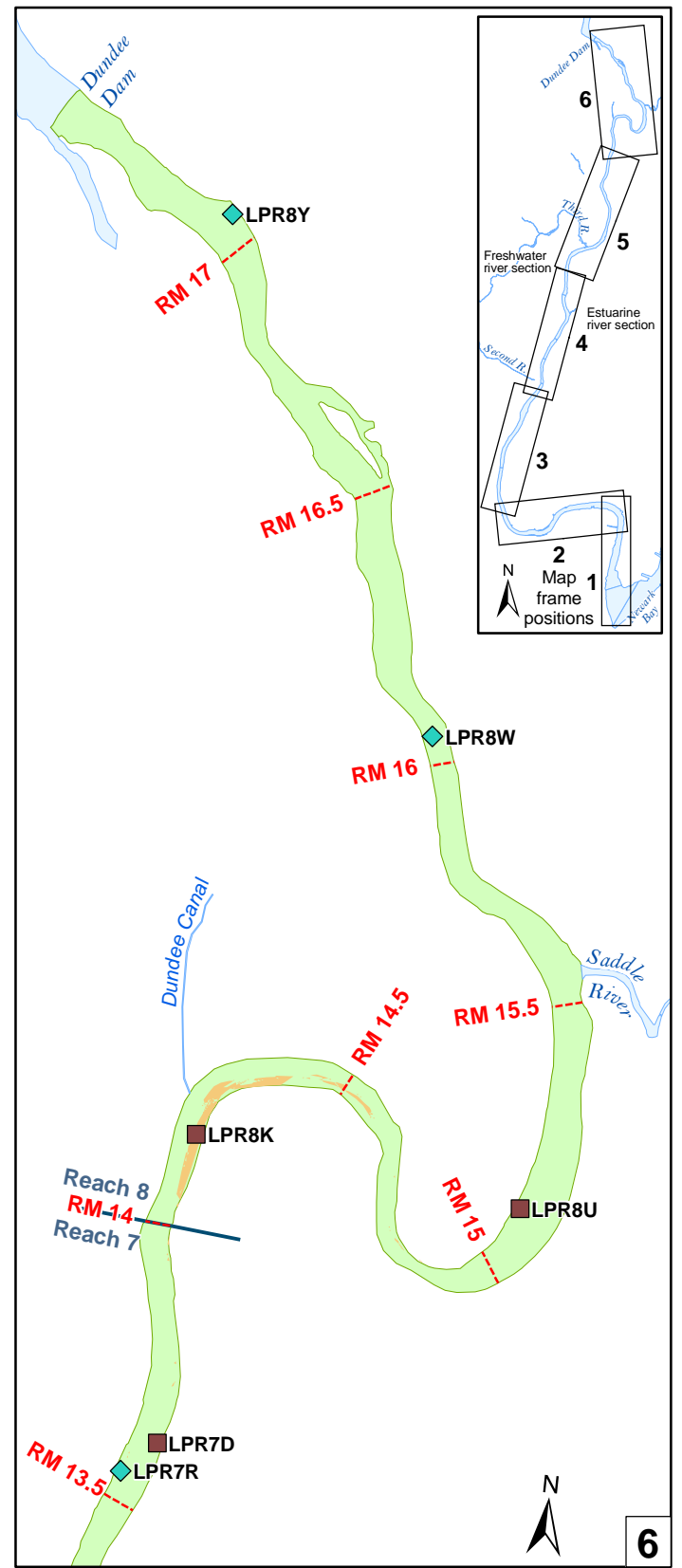
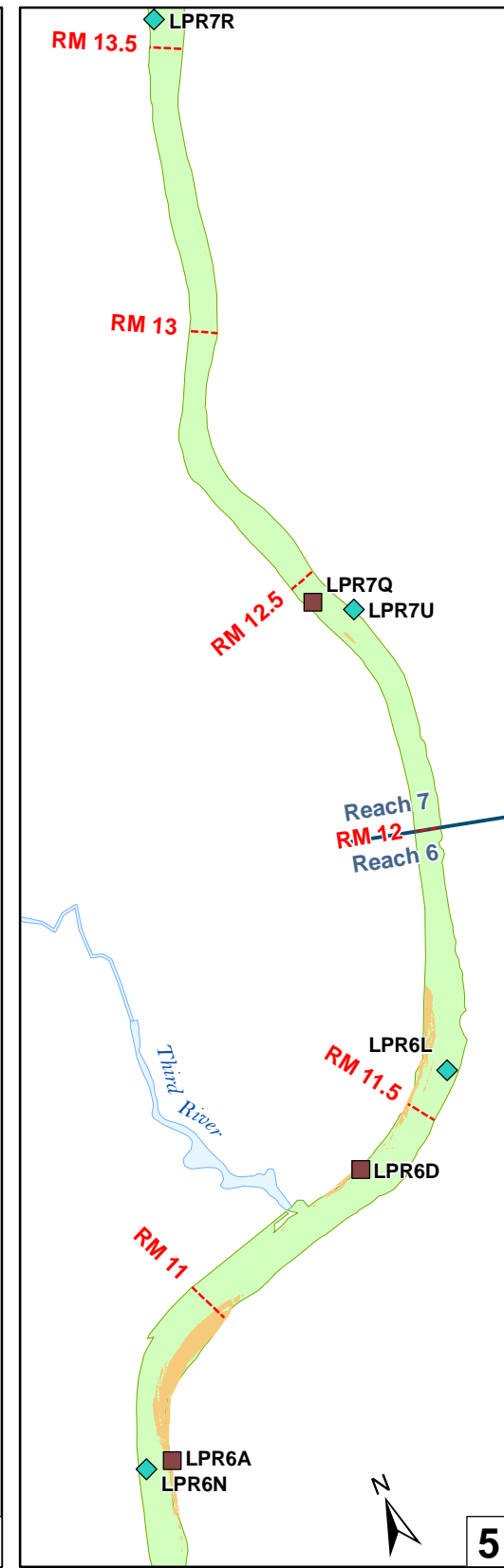
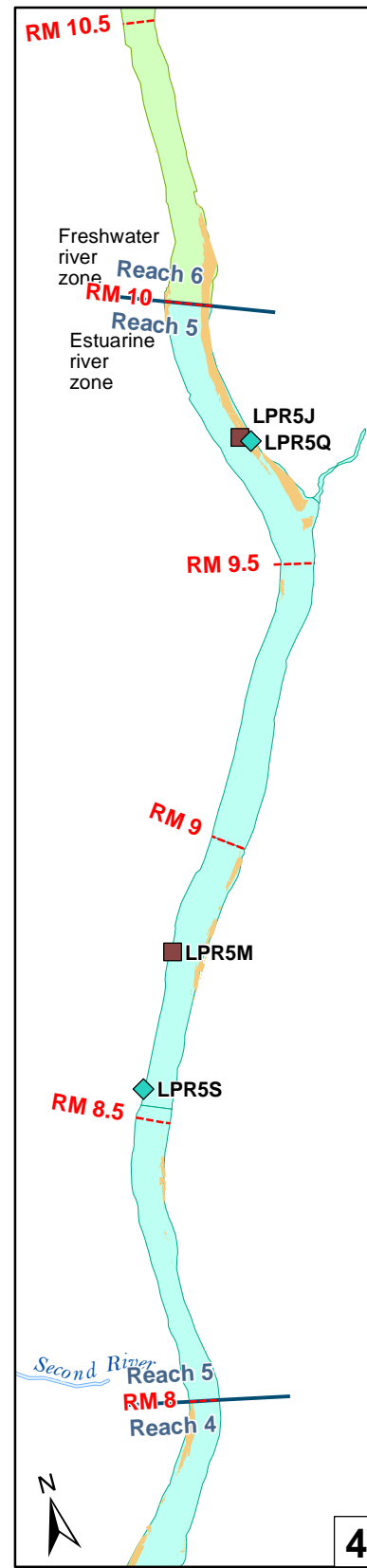
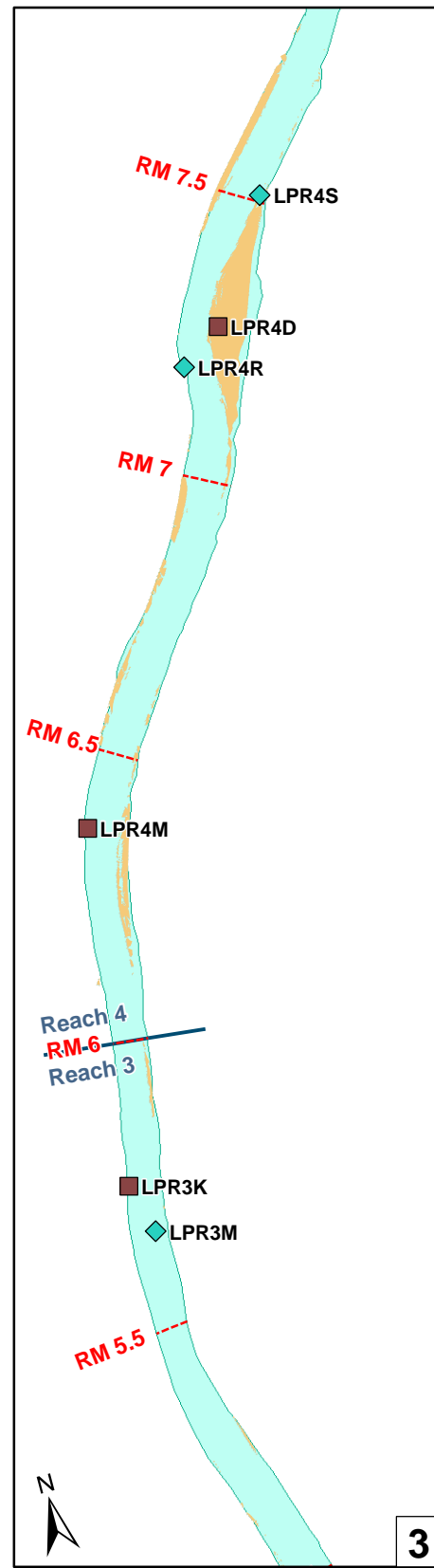
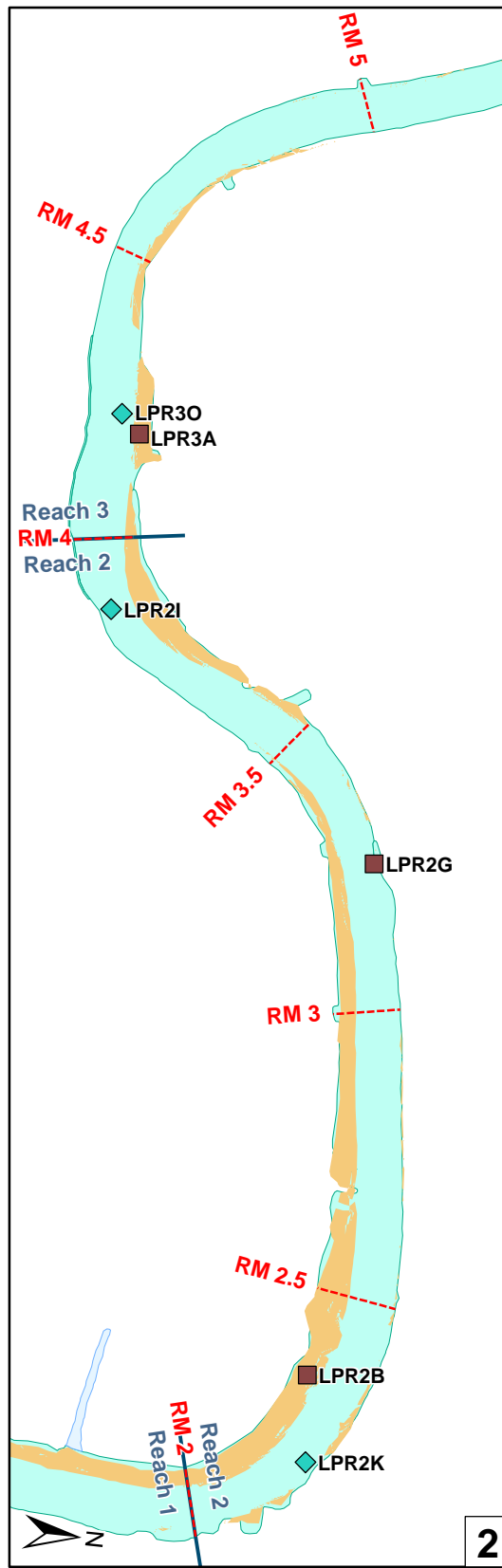
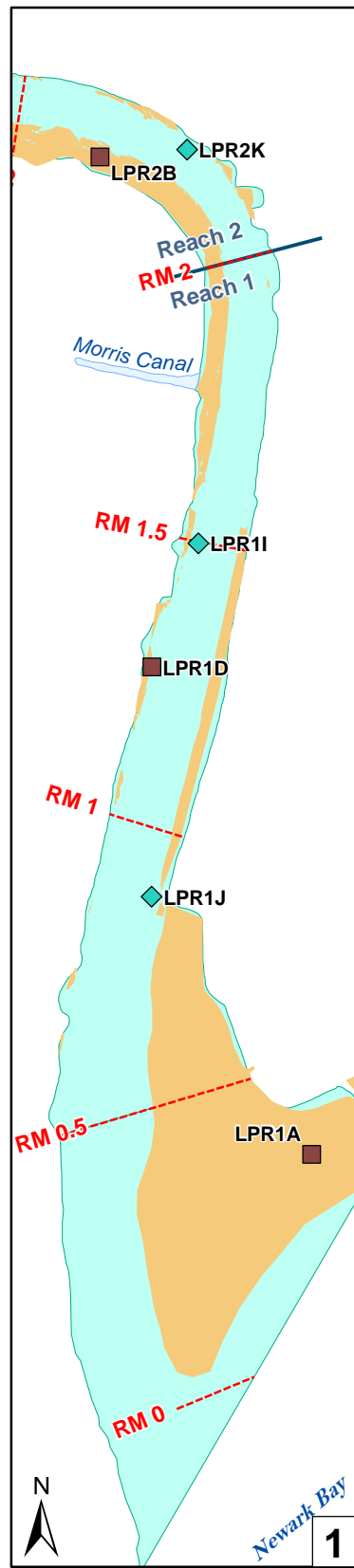
The results will be presented in text of the Data Comparability Report. Data gaps will be evaluated if requested by USACE/EPA. The report will discuss the completeness of the planned and collected data and the affect on the data objective of evaluating the accuracy of the CPG's data.

Appendix F

Figure 1 Excerpted from CPG's Fish/Decapod QAPP

Addendum No. 3: Late Spring/ Early Summer 2010

Fish Community Survey



- Traps and trotline
- Gillnet or electrofisher
- Sampling reach boundary
- Mudflat
- River mile
- LPRSA
- Estuarine river section
- Freshwater river section
- Upper Passaic River or tributary

Mudflats are areas where the river bottom slope is $\leq 6^\circ$ and the depth is ≤ 4.5 feet (1/2 the mean MLW to MHW tidal range, plus 2 feet). Mudflats were determined as those areas of fine (i.e., silt or sand) sediment substrate. LPRSA sediment grain size is based on shapefiles received from ENSR|AESOM, from the Draft Technical Report, Geophysical Survey: Lower Passaic River Restoration Project (Aqua Survey, Inc., 2005a). LPRSA bathymetry layer in all areas is based on the 2004 bathymetry data from Rogers Surveying (for USACE). The Kearney Point mudflat is outside the survey area and was estimated from NOAA bathymetry.

Figure 1. Proposed sampling locations for the late spring/early summer 2010 LPRSA fish community survey

DRAFT